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How to Irrigate Better

Improve efficiency

Improved irrigation efficiency is the adoption or installation of any practice or method of using supplemental water that will reduce water losses or make water use more effective.

High irrigation efficiency can only be obtained if the irrigation system contains all of these elements:

1. Good distribution system - buried or surface pipe or lined ditches;

2. Uniform land slopes;

3. Drainage system with tailwater recovery; and

4. Proper management of the irrigation water.

The efficiency of sprinkler systems can be improved by replacing worn nozzles and by keeping nozzles clear of obstructions.

Low pressure sprinklers on silt loam soils may require a large amount of crop residue on the soil surface to keep runoff water to a minimum.

Pipeline systems

Water must be delivered to the crop for irrigation to be profitable. A combination of buried

Irrigation pipe can deliver water to the field more efficiently than open ditches. Phillips County

and surface pipe can deliver water to the field with minimal losses.

An open irrigation ditch on a silt loam soil can lose from 3 to 5 gallons per minute for each 100 feet of ditch. The use of a pipeline will reduce these losses and provide more water for the crop.

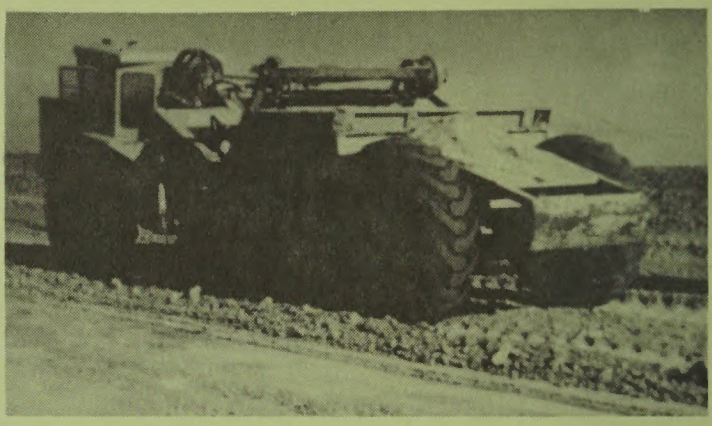
Leaking gates and gaskets in gated pipe should be repaired or replaced. Thirty gates, leaking one gallon per minute each, would provide enough water to irrigate one furrow in some systems.

Land leveling

Land leveling may be required before water can be distributed evenly. The objective of a good irrigation system is for the water to be applied at the desired amount throughout the length of the field. Land

slopes must be reasonably uniform for this to be achieved.

A field with flat and steep slopes may require each slope to be watered independently for irrigation to be efficient. Land leveling to a uniform slope will eliminate slope variations in the field and allow water to soak in more evenly.



Land leveling helps deliver irrigation water evenly. Finney County

Limited irrigation

Limited irrigation is a method of timing the irrigation application so the crop will get the most benefit from a limited water supply.

Wheat and grain sorghum are two crops which respond very well to this method, while corn and alfalfa do not respond as well.

Studies have shown that proper timing of a limited supply of water on wheat and grain sorghum can result in yields nearly equal to "full" irrigation.

A tailwater recovery pit helps recover irrigation water. Finney County

Recovery systems

The furrow method of applying water is the most popular method in Kansas. One means of getting a uniform application using furrows is by allowing some water to run out the lower end of the furrow and then recover it for reuse on the field.

A good drainage system is essential to move excess water to the recovery pit. A recovery system usually consists of a sediment basin, collection pit, pump, and pipeline.

An efficient recovery system can increase the irrigation efficiency up to 15 percent, especially on steeper slopes.

Surge valves

A surge control valve installed in a surface pipeline system will alternately switch water between two sets until the water gets to the end of the field.

Some models can then cut back the stream flow and water on both sets at the same time until the desired amount of water is applied. This method of irrigating results in a nearly uniform application depth throughout the field. Up to 50 percent water savings can be realized, especially during the first irrigation.

Surge irrigation in furrows is one of the most efficient ways of using irrigation water.
Haskell County

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